

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVERLIBRARY  
FOR JANUARY 1943

The Weather

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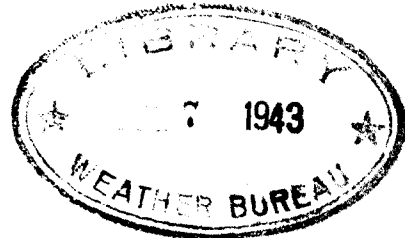
Slightly cooler than usual ; mild in the middle of the month, much cooler in the latter part.

At the beginning of the month Egypt was under the influence of a depression over the Mediterranean ; winds blew from the southeast and the weather was mild. Light rain fell on the 3rd and during the evening the wind strengthened. All the following day strong southwesterly winds traversed Egypt, often reaching gale force, and giving rise to severe dust storms throughout Lower and Middle Egypt. At Alexandria the wind velocity reached 90 kilometres per hour in the early morning of the 4th. With the arrival of the depression over northern Syria on the afternoon of the 5th the wind became more westerly and weakened, the weather became cooler and showers occurred in many places.

On the 9th and 10th Egypt was again affected by low pressure over the Mediterranean, with cool southerly winds, which strengthened on the 11th, and there were light showers on the coast and in the northern part of the Delta on that day and the following morning, and the weather became warmer. On the night of the 14-15th the wind at Alexandria reached 90 kilometres per hour in gusts during the passage of a secondary.

On the 17th a wedge of high pressure extended across the central Mediterranean, with low pressure over northern Syria and a spell of unsettled showery weather lasting for a week ensued ; 17 millimetres of rain were registered at Alexandria on that day, and rain fell on seven days in succession. The temperature remained below normal during this period, being at its lowest on the 21st. Conditions were generally settled and fair for a few days from the 23rd but on the 28th the presence of a depression over Cyprus brought a return of cold rainy weather which lasted till the end of the month, when the day temperature in Cairo did not rise above 15° C. (59° F) or 5° C. below the normal for the time of year. The wind reached gale force over the eastern Mediterranean, a velocity of 80 kilometres per hour being registered at Alexandria on the 29th, while 35 millimetres of rain fell there in the last five days ; of this 26 millimetres fell on the 28th and 29th. Heavy showers were wide-spread, especially near the coast and in the northern part of the Delta, accompanied at Damietta by hail.

For the month as a whole the barometric pressure was below normal in Lower and Middle Egypt and above normal in Upper Egypt and the Western Desert, while the temperature was below normal in Lower Egypt and above normal elsewhere, but the departures were very small. Rainfall was slightly above normal on the Mediterranean Coast and below normal elsewhere. Rain fell on 16 days at Alexandria, giving a total of 85 millimetres ; the normal amount for January is 50 millimetres. Relative humidity averaged 9 per cent below normal at both Alexandria and Cairo ; at Alexandria it was below normal on all but three days in spite of the rainy spells.



# **National Oceanic and Atmospheric Administration**

## **Environmental Data Rescue Program**

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# DEPARTURE FROM NORMAL FOR JANUARY 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN (2))			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1017.5	-0.7	18.0	-0.6	10.8	+0.2	14.4	-0.2	43	+ 9
II.—Lower Egypt ...	1018.1	-0.8	18.8	-1.0	6.9	+0.1	12.8	-0.4	9	- 3
III.—Middle Egypt ...	1018.9	-0.5	19.7	+0.5	7.8	+0.1	13.8	+0.3	1	- 4
IV.—Upper Egypt ...	1019.8	+0.2	21.1	-0.2	7.2	+0.1	14.2	0.0	0	- 2
V.—Western Desert	1020.6	+0.4	20.3	-0.9	5.1	+0.1	12.7	-0.4	0	0
VI.—Red Sea (Egypt) <sup>(2)</sup>	1018.0	+0.1	21.2	-0.6	11.3	-0.1	16.2	-0.4	Drops	- 1
VII.—Red Sea (Sudan) <sup>(3)</sup>	1015.0	-0.6	—	—	—	—	—	—	1	- 5
VIII.—North Sudan ...	1014.7	-0.5	29.9	-0.1	13.8	+0.9	21.8	+0.4	0	0
IX.—Central Sudan ...	1012.8	-0.5	32.5	-0.6	14.2	+1.0	23.4	+0.2	0	0
X.—South Sudan ...	1010.8	-0.2	36.2	-0.1	19.7	+1.1	28.0	+0.5	1	- 1

<sup>(1)</sup> Alexandria and Port Said.

<sup>(2)</sup> Tor and Quseir.

<sup>(3)</sup> Port Sudan only.

L. J. SUTTON,

*Director, Meteorological Service.*

### State of the River

Lake Albert at Butiaba fell 19 centimetres during the month. Its level on February 1, 1943 was 82 centimetres above the normal and 70 centimetres above the corresponding day of last year.

The Bahr el Jebel at Juba fell few centimetres during the month. The levels were above both the normal and last year's throughout.

The River Sobat at Nasser continued its fall at slower than normal rate. The levels were continuously much below both the normal and last year's.

The White Nile at Malakal fell at a normal rate. The levels were on the average half a metre below both the normal and those of last year.

The Blue Nile at Roseires also fell normally, the levels were a little above both the normal and last year's throughout. At Khartoum the river fell rather more rapidly until the 21st and was almost steady thereafter.

On the Main Nile at Kajnarti, the river fell at normal rate till the 15th and more rapidly thereafter. The level which was 49 centimetres below the normal at the beginning of the month was 116 centimetres below it at its end. The levels were, as a whole, almost identical with those of last year.

The difference of the mean levels in January 1943 from those of January 1942, and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	January 1943 minus January 1942	January 1943 minus Normal
	Metre	Metre
Juba ... ..	+ 0·29	+ 0·19
Nasser ... ..	— 0·90	— 0·70*
Malakal ... ..	— 0·51	— 0·49
Roseires ... ..	+ 0·16	+ 0·28
Khartoum ... ..	— 0·30	— 0·57
Kajnarti ... ..	+ 0·06	— 0·61

\* Nasser Normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR FEBRUARY 1943

### The Weather

Mild for the first half ; remarkably cold in the latter part. Severe and widespread storms on 23rd. Snow on Gebel Ataq, near Suez.

At the beginning of the month Egypt was under the influence of a depression over the eastern Mediterranean. Winds were mainly from the northwest and the weather was unsettled and showery. High pressure was established over Egypt by the 6th giving rise to winds mainly from the northeast, with settled weather.

A deep depression arrived off Benghasi on the 11th ; during its approach the winds became southerly and the weather mild. On the 16th several shallow depressions were situated over Egypt and the eastern Mediterranean. Thunderstorms occurred at Damanhur, Port Said and Damietta ; at the latter station 19 mms. of rain were recorded, accompanied by hail ; 12 mms. fell at Suez. Showers were general throughout Lower Egypt.

An extraordinary cold spell began on the 19th and lasted for the rest of the month. On that day a shallow depression was situated over northern Syria and very cold air arrived in Egypt from the northwest. On the 22nd a depression over the eastern Mediterranean deepened and conditions became very disturbed. Temperatures fell rapidly and rain was widespread. During the 48 hours beginning at 8h on the 21st 46 mms. were recorded at Brollos, 33 at Damanhur, 25 at Giza and Gemeiza, 24 at Helwan, 23 at Tanta and 20 in Cairo. Most of the rain fell during the early hours of the 23rd, when a very severe gale blew from the northwest, reaching an instantaneous velocity of 90 kilometres per hour at Alexandria and 85 at Helwan. The gale continued practically throughout the day ; considerable structural damage resulted and large numbers of trees were blown down.

In Cairo district it was the coldest day in February for fifteen years ; the temperature in the early morning fell to 3 or 4° C. above freezing point, while the afternoon temperatures were generally 8 or 9° C below normal, not rising above 14° C (57° F) in Cairo and 12° C (54° F) at Helwan. In Upper Egypt the cold was relatively more intense, the afternoon temperatures at Qena and Aswan being 15° C, or 12° C below the normal for the time of year.

The summital plateau of Gebel Ataq (altitude 870 m.) near Suez, was covered with snow, and long patches separated by the bare rock stretched down the slopes. Even a day later some of these patches in places sheltered from the sun were found by M. Daumas to be ten centimetres in thickness. (As far as can be ascertained, this is the only occasion for over twenty years on which snow has been observed lying on Gebel Ataq. In February 1920, snow lay on the ground at El Arish ; on 15 February, 1934, snow fell on the plateau (altitude 180 m.) at Salum and remained on the ground for some hours.)

The effect of this remarkably cold mass of air was subsequently felt even in the extreme south of the Sudan. From the 23rd the cold became less intense in Egypt, but temperatures remained well below normal and the weather unsettled and showery for the remainder of the month.

For the month as a whole the barometric pressure was much above normal throughout Egypt and the Sudan, especially in Lower Egypt, while the temperature was everywhere below normal. Rainfall was slightly above normal on the Mediterranean Coast, and considerably above normal in Lower and Middle Egypt.

DEPARTURE FROM NORMAL FOR FEBRUARY 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN (2))			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1019.0	+2.1	19.0	—0.4	11.2	+0.1	15.1	—0.2	27	+ 3
II.—Lower Egypt ...	1019.8	+3.0	19.6	—1.0	6.6	—0.4	13.1	—0.7	20	+10
III.—Middle Egypt ...	1019.8	+2.2	20.4	—0.3	7.6	—0.7	14.0	—0.5	21	+17
IV.—Upper Egypt ...	1020.1	+2.3	21.9	—1.4	7.5	—0.7	14.7	—1.0	Drops	— 1
V.—Western Desert	1021.4	+2.9	21.1	—2.3	5.8	—0.2	13.4	—1.2	0	— 1
VI.—Red Sea(Egypt)(2)	1018.2	+1.9	20.8	—1.6	11.1	—0.9	16.0	—1.2	0	— 1
VII.—Red Sea(Sudan)(3)	1015.5	+0.8	—	—	—	—	—	—	0	— 3
VIII.—North Sudan ...	1014.7	+0.9	29.9	—1.9	12.5	—1.3	21.2	—1.6	0	0
IX.—Central Sudan ...	1013.4	+1.3	32.5	—2.0	13.1	—1.2	22.8	—1.6	0	0
X.—South Sudan ...	1011.1	+1.1	35.1	—1.3	19.4	—0.6	27.8	—1.0	Drops	— 6

(1) Alexandria and Port Said.

(2) Tor and Quseir.

(3) Port Sudan only.

L. J. SUTTON,

Director : Meteorological Service.

### State of the River

Lake Albert at Butiaba fell 17 cms. during the month. Its level on March 1st, 1943 was 76 cms. above the normal and 57 cms. above the corresponding day of the last year.

The Bahr el Jebel at Juba was almost steady throughout the month. The levels were above both the normal and last year's.

The River Sobat at Nasser fell almost normally. The levels were on the average 30 cms. below last year's levels.

The White Nile at Malakal fell at slower than normal rate, the levels in general were below the normal but almost identical with those of last year. At Gebel Aulia, regulation for emptying the Reservoir started on the 3rd, the downstream levels rose sharply until the 9th and kept almost steady thereafter.

At Roseires the Blue Nile fell half a metre during the month. The levels as a whole were above both the normal and last year's. At Khartoum the river followed the same features prevailing downstream Gebel Aulia.

At Kajnarti, on the Main Nile, the River fell slightly until the 18th, a rapid and steady rise—due to contribution from Gebel Aulia—then followed and was maintained till the end of the month.

The levels were in general below both the normal and last year's throughout.

The difference of the mean levels in February 1943 from those of February 1942, and from the normal (1906–1935) were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	February 1943 minus February 1942	February 1943 minus Normal
	Metre	Metre
Juba ... ..	+ 0·21	+ 0·16
Nasser ... ..	— 0·30	— 0·05*
Malakal ... ..	+ 0·01	— 0·21
Roseires ... ..	+ 0·21	+ 0·25
Khartoum ... ..	+ 0·11	+ 0·13
Kajnarti ... ..	— 0·26	— 0·80

\* Nasser Normal is for 1922–35 only.

Y. M. SIMAIKA,  
*Director : Hydrological Service.*

REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR MARCH 1943

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The Weather

Remarkably cool practically throughout the month ; many more days of rain than usual.

At the beginning of the month the presence of a depression near Cyprus gave rise to cool west and north-west winds in Egypt, reaching a velocity of 75 kilometres per hour at Alexandria, while there were light showers along the coast and in the Delta. The cool weather intensified and rain was again general in Lower Egypt on the 5th and 6th, which was exceptionally cold for the time of year. At Helwan the temperature on that day did not exceed  $13^{\circ}$  C. ( $56^{\circ}$  F.); this was the coldest day there in March since 1916. At Giza the temperature in the early morning of the 7th fell to within two degrees of freezing point, while generally throughout Egypt day temperatures were 9 or  $10^{\circ}$  C. below normal.

With the passage of the depression to northern Iraq and the formation of high pressure over the eastern Mediterranean the winds blew from the north-east and temperatures rose steadily. By the 11th, Egypt came under the influence of a depression situated over the central Mediterranean and winds veered to the south. With its approach the weather became much warmer, the temperature on the following day reaching  $29^{\circ}$  C. ( $84^{\circ}$  F.) in Cairo, but owing to the rapid arrival of the depression north of Egypt, and the consequent veering of the wind to west and north-west, the warm spell was of short duration. Showery weather prevailed from the 13th to the 16th, while thunderstorms occurred on the Mediterranean coast, in the Delta, and in the Canal Zone on the afternoon and evening of the 14th. On that day 14 millimetres were registered at Damietta. Light showers occurred also in Upper Egypt as far south as Aswan.

On the 19th, a deep depression was centred over Benghazi. Very light rain accompanied its approach, and strong southerly winds gave rise to widespread dust-storms. By the 21st, the depression had reached the coast of Palestine, and cool winds arrived from the north-west, reaching a velocity of 82 kilometres per hour at Alexandria. The weather was very rainy and unsettled for some days, the highest amounts recorded being 28 millimetres at Port-Said and El-Arish, 26 millimetres at Sirw and 24 millimetres at Damietta on the 21st and 22nd.

Temperature rose on the 23rd, but the deepening of a depression situated over Syria combined with high pressure over the central Mediterranean resulted in the arrival of cold air from the Balkans and by the 25th temperatures were again as much as  $9^{\circ}$  C. below normal, and showers took place throughout Lower Egypt. At Aswan on the 26th the maximum temperature was only  $22^{\circ}$  C. ( $72^{\circ}$  F.) or  $11^{\circ}$  C. below normal, and in Upper Egypt generally the cold weather was, relatively speaking, more pronounced than elsewhere. This cold wave travelled as far as the south of the Sudan.



During the last week the weather gradually became warmer, winds being mainly north-easterly but it was not until the last day of the month that the temperature rose to normal.

For the month as a whole the departures of the mean barometric pressure from normal were everywhere very small. Throughout Egypt and the Sudan the temperature was much below normal, but not on the whole below that of March 1938 or 1921. Rainfall was much above normal in Lower Egypt. At many places near the coast and in the Delta, rain fell on 10 or more days, compared with an average of 3 or 4 for March; in the southern Sudan rainfall was below normal.

DEPARTURE FROM NORMAL FOR MARCH 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN (2))			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1015.8	+0.2	19.6	—1.6	12.2	—0.9	15.9	—1.2	19	+ 7
II.—Lower Egypt ...	1016.0	—0.3	20.8	—3.1	7.8	—1.2	14.3	—2.2	15	+ 9
III.—Middle Egypt ...	1016.1	—0.3	22.2	—2.0	9.5	—1.0	15.8	—1.5	2	— 2
IV.—Upper Egypt ...	1016.0	+0.1	25.1	—2.8	9.7	—1.3	17.4	—2.0	1	+ 1
V.—Western Desert	1016.8	0.0	25.0	—2.6	8.8	—1.0	16.9	—1.8	Drops	0
VI.—Red Sea (Egypt) (2)	1014.4	—0.1	22.6	—2.2	—	—	—	—	0	— 1
VII.—Red Sea (Sudan) (3)	1012.8	0.0	—	—	—	—	—	—	—	—
VIII.—North Sudan ...	1011.4	0.0	33.8	—1.9	15.6	—1.3	24.7	—1.6	0	0
IX.—Central Sudan ...	1009.8	0.0	36.9	—0.8	17.0	—0.1	27.0	—0.4	0	— 1
X.—South Sudan ...	1009.0	—0.1	37.5	—0.6	21.9	+0.4	29.7	—0.1	9	—12

(1) Alexandria and Port Said.

(2) Tor and Quseir.

(3) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba fell 24 centimetres during the month. Its level on April 1, 1943 was 61 centimetres above the normal and 22 centimetres above the level of the corresponding day of last year.

The Bahr el-Jebel at Juba was almost steady during the month. The levels were on the average a little above the normal and almost identical with last year's.

The River Sobat at Nasser fell about 10 centimetres till the 25th, when a slight rise set in which was maintained to the end of the month. The levels were on the average about the normal but much below those of last year.

The White Nile at Malakal continued its fall at less than normal rate. Almost steady levels were recorded by the end of the month. The Levels as a whole were about 10 centimetres below both the normal and last year's.

The Blue Nile at Roseires fell at normal rate and a slight rise was recorded by the end of the month. The levels were as a whole a few centimetres above the normal but 62 centimetres below those of last year. At Khartoum, the levels were almost steady during the month.

At Kajnarti on the Main Nile, the River fell slightly throughout the month and the levels were about half a metre above the normal and a few centimetres above those of last year.

The difference of the mean levels in March 1943 from those of March 1942, and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	March 1943 minus March 1942	March 1943 minus Normal
	Metre	Metre
Juba ... ..	+ 0·02	+ 0·11
Nasser ... ..	— 0·81	— 0·09*
Malakal ... ..	— 0·12	— 0·10
Roseires ... ..	— 0·62	+ 0·14
Khartoum ... ..	— 0·10	+ 0·29
Kajnarti ... ..	+ 0·11	+ 0·46

\* Nasser Normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR APRIL 1943

### The Weather

Remarkably cool. On the Mediterranean coast and in Lower Egypt, about as cool as April 1933, 1914 and 1909. In Middle and Upper Egypt, the coolest April at least since observations began in 1900.

There was unusual infrequency of khamisin disturbances and a complete absence of hot weather. The temperature in Cairo never exceeded  $32^{\circ}\text{C}$ . ( $90^{\circ}\text{F}$ .) at any time during the month, whereas such a temperature has been exceeded in April of every other year since 1884 at least, with the exception of 1914, when the highest temperature reached in April was also  $32^{\circ}\text{C}$ .

On the morning of the 2nd, thick fog occurred in several places in Lower Egypt. On the 3rd, a depression appeared in the western desert, passing rapidly over Egypt on the following day and causing khamisin conditions with strong warm southerly winds and severe and widespread dust storms. The temperature in Cairo rose to  $32^{\circ}\text{C}$ . ( $90^{\circ}\text{F}$ ), but the cold front arrived early in the afternoon with northwesterly winds of gale force attaining a velocity of 65 kilometres per hour at Helwan, and resulting in a pronounced fall of temperature, which did not exceed  $19^{\circ}\text{C}$ . ( $66^{\circ}\text{F}$ ) on the next two days, while at night it fell to  $8^{\circ}\text{C}$ . ( $46^{\circ}\text{F}$ ). The 5th. was the coolest day in April since 1929 in Cairo, and at least since 1900 in Alexandria. At Zagazig and Giza the temperature in the early morning of the 6th. fell to  $5^{\circ}\text{C}$ . ( $41^{\circ}\text{F}$ ).

Showers occurred during the passage of the depression, but except near the coast they were very light. At Alexandria the wind velocity reached 78 kilometres per hour on the 6th.

The temperature then rose quickly, and on the 8th. Egypt came under the influence of a Mediterranean depression and winds again blew from the south. Dust storms and khamšin conditions prevailed on the 10th. and the temperature in Cairo rose to  $32^{\circ}\text{C}$ . (or  $3^{\circ}\text{C}$ . above the normal for the time of year), but by the following day the depression had reached Syria and northwesterly winds traversed Egypt, again bringing a very sharp fall in temperature, the maximum temperature in Cairo on the 12th., being only  $20^{\circ}\text{C}$ . ( $68^{\circ}\text{F}$ .). Subsequently an extensive anticyclone formed over the central Mediterranean and in the absence of depressions, this severe cold spell lasted for nearly a fortnight, during which the wind was mainly northwesterly and the temperature by day varied between 6 and  $10^{\circ}\text{C}$ . below normal, being relatively coolest in Upper Egypt. For a week light showers occurred throughout Lower Egypt. During the last week there was some easterliness in the wind, the weather became milder and there were occasional morning mists.

For the month as a whole the barometric pressure was everywhere much above normal, while the temperature was much below normal, especially in Upper Egypt and the northern Sudan. Rainfall was above normal on the Mediterranean coast. In the southern Sudan it was considerably below normal.

DEPARTURE FROM NORMAL FOR APRIL 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN (2))			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1016.6	+2.7	21.5	—2.1	13.7	—1.7	17.6	—1.9	11	+ 7
II.—Lower Egypt ...	1017.0	+2.4	24.3	—3.5	9.5	—2.3	16.9	—2.9	2	— 1
III.—Middle Egypt ...	1017.0	+2.6	25.6	—2.8	11.4	—1.9	18.5	—2.4	Drops	— 2
IV.—Upper Egypt ...	1016.5	+3.0	28.4	—4.2	12.6	—2.6	20.5	—3.4	0	0
V.—Western Desert	1017.8	+3.5	27.8	—4.6	11.4	—2.4	19.6	—3.5	0	0
VI.—Red Sea (Egypt) (2)	1014.3	+2.0	25.2	—2.6	13.6	—4.4	19.4	—3.5	0	0
VII.—Red Sea (Sudan) (3)	1013.2	+2.1	—	—	—	—	—	—	—	—
VIII.—North Sudan ...	1012.7	+3.2	35.5	—3.7	17.1	—3.1	26.3	—3.4	0	— 1
IX.—Central Sudan ...	1010.3	+2.3	38.1	—2.0	18.7	—1.6	28.4	—1.8	0	— 4
X.—South Sudan ...	1010.3	+1.1	37.7	+0.5	23.5	+1.0	30.6	+0.8	22	—45

(1) Alexandria and Port Said.

(2) Tor and Quseir.

(3) P. Sudan only

L. J. SUTTON,

Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba fell 6 cms. during the month. Its level on May 1st., 1943 was 56 cms. above the normal and almost identical with the level of the corresponding day of last year.

The Bahr el Jebel at Juba rose slightly by the end of the month. The levels were as a whole a few cms. above both the normal and last year's.

The River Sobat at Nasser rose slightly above the normal till the 4th. then dropped steadily until the 16th. when the level was 54 cms. below the normal. It rose again to about normal level on the 27th. and kept almost steady till the end of the month. The levels were generally identical with the normal but much below last year's.

During the first week, the white Nile at Malakal rose a few cms. then dropped back and was practically steady till the end of the month. The levels were identical with the normal and slightly above last year's. At Gebel Aulia regulation for emptying the Reservoir ended on the 19th. The D.S. levels which were almost steady before that date fell rapidly thereafter.

The Blue Nile at Roseires fell more rapidly than normal rate until the 23rd. a steady rise amounting to half a metre was then recorded and was maintained to the 29th. The levels were generally almost identical with both the normal and those of the last year. At Khartoum, the River followed the same features recorded D.S. Gebel Aulia.

At Kajnarti, on the Main Nile, the levels fell slightly throughout the month. They were 60 cms. above the normal but about 20 cms. below those of last year.

The difference of the mean levels in April 1943 from those of April 1942 and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	April 1943 minus April 1942	April 1943 minus Normal
	Metre	Metre
Juba ... ..	+ 0·07	+ 0·07
Nasser ... ..	+ 0·05	— 0·26
Malakal ... ..	+ 0·12	0·00
Roseires ... ..	— 0·04	+ 0·07
Khartoum ... ..	— 0·20	0·00
Kajnarti ... ..	— 0·18	+ 0·60

\* Nasser Normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER 1943

FOR MAY 1943

### The Weather

Apart from a moderate heat wave in the first week, the weather was abnormally cool practically throughout the month, and there was a remarkable freedom from khamsin disturbances. The average daily maximum temperature was in most districts the lowest for May since 1932; it was the lowest at Alexandria since 1927, and at Helwan since 1920. Night temperatures however were but slightly below normal. Other outstanding features were the occurrence of thunderstorms in Upper Egypt in the first week, and widespread rain during the third week.

At the beginning of the month winds were mainly north-easterly and the weather mild. On the 4th and 5th conditions in Upper Egypt were very disturbed; thunderstorms took place and in a few localities light rain fell. On the 6th Egypt came under the influence of a shallow depression off Salum and the weather became warmer. The approach of a second depression along the eastern Mediterranean, causing southerly winds in Egypt, prolonged the heat wave, which reached its greatest intensity on the 8th, when the temperature in Cairo reached  $41^{\circ}\text{C}$ . ( $106^{\circ}\text{F}$ .). The following night was very warm, the temperature in Cairo not falling below  $25^{\circ}\text{C}$ . ( $77^{\circ}\text{F}$ .) or  $9^{\circ}\text{C}$ . above normal. The depression passed on that day and with the arrival of north-westerly winds the weather became steadily cooler until the 13th, when the temperature did not rise above  $27^{\circ}\text{C}$ . ( $81^{\circ}\text{F}$ .) in Cairo, or  $5^{\circ}\text{C}$ . below normal, while at night it fell to  $14^{\circ}\text{C}$ . ( $57^{\circ}\text{F}$ .) and  $11^{\circ}\text{C}$ . ( $52^{\circ}\text{F}$ .) at Giza. This cool spell persisted with some modifications for the rest of the month. Conditions were very unsettled on the 18th and 19th when the weather was very cool, and frequent showers, heavy in places, occurred, throughout Egypt from the coast as far south as Minya. Thunderstorms were reported in the north of the Delta; at Damanhur the rainfall during the two days amounted to 15 mms., but at most stations it did not exceed 5 mms. taking the form of a succession of light showers. Light showers again occurred in Middle Egypt on the 22nd, after which the weather became settled and less cool; on the 27th and 28th the temperature rose to one or two degrees above normal for the first time since the 9th. Cool air arrived in Egypt from the north-west during the 28th, reaching a velocity of 70 kilometres per hour at Helwan during the evening, and by the following day temperatures were again much below normal, and light showers occurred near the coast and in the northern part of the Delta.

For the month as a whole the barometric pressure was much above normal throughout Egypt. The mean temperature was below normal throughout Egypt, but not by large amounts, and slightly above normal in the central and southern Sudan.

Rainfall was above normal in Egypt, about normal in the central Sudan, but much below normal in the southern Sudan.

DEPARTURE FROM NORMAL FOR MAY 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1015.2	+2.0	25.1	—1.0	18.3	+0.1	21.7	—0.5	2	+ 1
II.—Lower Egypt ...	1015.2	+1.5	30.0	—1.4	14.7	—0.5	22.4	—1.0	4	+ 2
III.—Middle Egypt ...	1015.0	+1.9	31.6	—0.7	16.5	—0.3	24.0	—0.5	1	0
IV.—Upper Egypt ...	1013.2	+1.4	35.4	—0.8	19.4	—0.0	27.4	—0.4	0	0
V.—Western Desert	1014.6	+2.0	34.4	—2.2	18.4	0.0	26.4	—1.1	0	0
VI.—Red Sea (Egypt) <sup>(2)</sup>	1011.6	+0.8	29.8	—1.2	21.2	0.5	25.5	—0.8	0	0
VII.—Red Sea (Sudan) <sup>(3)</sup>	1009.3	—0.2	—	—	—	—	—	—	dr.	— 1
VIII.—North Sudan ...	1008.7	+0.1	41.0	—0.4	24.2	+0.4	32.6	0.0	1	— 4
IX.—Central Sudan ...	1007.9	—0.7	39.7	—0.2	24.3	+1.7	32.0	+0.8	21	— 2
X.—South Sudan ...	1011.2	+0.6	34.8	—0.1	23.0	+1.0	28.9	+0.4	81	—41

<sup>(1)</sup> Alexandria and Port Said.

<sup>(2)</sup> Tor and Quseir.

<sup>(3)</sup> P. Sudan only.

L. J. SUTTON,

Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba fell half a metre during the month. Its level on June 1, 1943, was almost normal but 77 cms. below the level of the corresponding day of the last year.

At Juba, the Bahr el-Jebel recorded some flushes with a high one on the 29th. The levels were as a whole about both the normal and last year's.

The River Sobat at Nasser was almost steady for the first seven days of the month. It then rose rapidly until the 14th when it was only a few cms. below the normal: the levels, however, fluctuated slightly afterwards until the end of the month. The levels were on the average much below the normal and last year's throughout.

The White Nile at Malakal after remaining steady during the first fortnight, rose slightly until the end of the month. The levels were almost identical with both the normal and last year's.

During the early part of the month, the Blue Nile at Roseires fell slightly. Two big flushes were recorded afterwards, the higher occurring on the 21st when the level was 78 cms. above the normal. On the 24th, flood conditions developed and red water was reported. During the last week, a heavy fall amounting to one metre set in and the levels were much below the normal until the end of the month. At Khartoum conditions at Roseires were smoothed and repeated some days later.

Readings from the River Atbara at Khashm el-Girba started on the beginning of the month. After rising to a peak on the 10th, the levels fell gradually afterwards until the 26th when the River vanished again into pools.

Owing to the cessation of the contribution from Gebel Aulia Reservoir, the Main Nile at Kajnarty fell very rapidly throughout the month. The level which was 48 cms. above the normal on the beginning of the month was 54 cms. below it on its end. The levels were in general below both the normal and those of last year.

The difference of the mean levels in May 1943 from those of May 1942 and from the normal 1906-1935 were :

STATION	MEAN DIFFERENCE OF LEVELS	
	May 1943 minus May 1942	May 1943 minus Normal
	Metre	Metre
Juba ... ..	— 0 08	+ 0·02
Nasser ... ..	— 0·75	— 0·57*
Malakal ... ..	— 0·01	— 0·03
Roseires ... ..	— 0·24	— 0·02
Khartoum ... ..	— 0·06	— 0·31
Khashm el Girba † ... ..	+ 0·04	— 0·01
Kajnarti ... ..	— 0·10	— 0·25

\* Nasser Normal is for 1922-35 only.

† For May 1-26 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*



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REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR JUNE 1943

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**The Weather**

Cooler and more settled than usual ; a complete absence of khamsin weather.

Cool north-westerly winds prevailed at the beginning of the month, the maximum temperature in Cairo on the 1st being only  $29^{\circ}$  C. ( $84^{\circ}$  F.), or  $5^{\circ}$  C. below normal, while in the middle of the Delta the temperature in the early morning fell to  $12^{\circ}$  C. ( $54^{\circ}$  F.).

On the 4th a depression appeared near Crete. winds in Egypt became easterly and the weather warmer. On the following day the temperature rose to  $39^{\circ}$  C. ( $102^{\circ}$  F.) at Helwan, and north-easterly winds reached a velocity of 72 kilometres an hour ; the air was very dry, much sand and dust being raised. The weather was almost as hot on the 6th, when similar conditions prevailed. At Aswan the temperature reached  $46^{\circ}$  C. ( $115^{\circ}$  F.), or  $5^{\circ}$  C. above normal. In the evening of that day the cool sector of the depression arrived in Egypt bringing north-westerly winds and a pronounced fall in temperature, which on the following day did not exceed  $31^{\circ}$  C. ( $88^{\circ}$  F.) in Cairo. Cool north-westerly winds prevailed throughout Egypt until the 11th. when settled conditions with northerly winds and average temperature were established, lasting until the 20th. Low cloud in the early morning was common, while on the 18th there was fog.

A cool spell, with north-westerly winds and much cloud during the day time, was experienced from the 20th to 24th, while drizzle was reported near Port Said in the forenoon of the 22nd. From the 25th to the end of the month the temperature was about average.

For the month as a whole the barometric pressure was much above normal throughout Lower and Upper Egypt ; the temperature was well below normal except in the central and southern Sudan. Rainfall in the central and southern Sudan was about normal.

DEPARTURE FROM NORMAL FOR JUNE 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1013.7	+1.8	27.9	—0.8	20.6	—0.5	24.2	—0.6	0	0
II.—Lower Egypt ...	1013.8	+1.8	31.7	—2.1	16.6	—1.5	24.2	—1.8	0	0
III.—Middle Egypt ...	1013.5	+1.9	33.5	—1.4	18.4	—1.2	26.0	—1.3	0	0
IV.—Upper Egypt ...	1011.3	+1.2	36.8	—1.6	20.5	—1.5	28.6	—1.6	0	0
V.—Western Desert	1013.8	+2.4	35.7	—3.1	19.7	—1.8	27.7	—2.4	0	0
VI.—Red Sea (Egypt)...	1009.0	+0.6	29.8	—3.3	22.0	—2.4	25.9	—2.8	0	0
VII.—Red Sea(Sudan)(2)	—	—	—	—	—	—	—	—	—	—
VIII.—North Sudan ...	1008.7	+0.7	40.4	—1.4	24.0	—1.0	32.2	—1.2	1	— 9
IX.—Central Sudan ...	1009.6	0.0	37.9	—0.3	23.5	+0.5	30.7	+0.1	40	— 8
X.—South Sudan ...	1013.0	+1.2	33.1	+0.2	22.1	+1.1	27.6	+0.6	141	— 2

(1) Alexandria and Port Said.

(2) Port Sudan only.

RAINFALL DATA FOR JUNE 1943 ( IN MM. ).

Station	1943	Diff.
Juba ... ..	173	+ 36
Wau ... ..	95	— 69
Malakal ... ..	156	+ 27
El-Obeid ... ..	15	— 21
El-Fasher ... ..	8	— 8
Khartoum ... ..	3	— 6
Adis Ababa ... ..	—	—
Roseires ... ..	154	+ 24
Wad Medani ... ..	10	— 22
Atbara ... ..	0	— 2
Kassala ... ..	Drops.	— 29
Port Sudan... ..	—	—

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba was steady during the month. Its level on July 1, 1943, was 54 cms. above the normal but 37 cms. below the level of the corresponding day of last year.

The Bahr el Jebel at Juba was almost steady until the 19th when it started to fluctuate with a tendency to rise until the end of the month. The levels in general were above the normal but little below last year's.

The River Sobat at Nasser continued to rise until the 6th, then after remaining steady for four days it rose again steadily to the end of the month. The levels were much below both the normal and last year's throughout.

The White Nile at Malakal rose at almost normal rate. The levels were throughout the whole month below both the normal and those of last year.

The Blue Nile at Roseires showed series of flushes gradually increasing in height. With the exception of the last flush, which occurred on the 28th when the level was about one metre above the normal, the river was continuously much below the normal and last year's levels throughout the whole month. The mean discharge was about 26 millions m<sup>3</sup>. per day, the lowest ever recorded for June with the exception of 1913. At Khartoum the River reflected the same features which happened at Roseires, the mean gauge for the month 10·08 metres corresponding to a discharge about 15 millions m<sup>3</sup>. per day, was also the lowest ever recorded since observations began in 1900.

Readings of the River Atbara at Khashm el Girba re-started on the 23rd the levels were generally rising to the end of the month but no significant discharge has been yet recorded.

The Main Nile at Kajnarti rose slightly until the 7th fell back till the 14th and was almost steady thereafter till the end of the month. The levels were on the average below both the normal and last year's throughout the month.

The difference of the mean levels in June 1943 from those of June 1942 and from the normal 1906–1935 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	June 1943 minus June 1942	June 1943 minus Normal
	Metre	Metre
Butiaba* ... ..	— 0·37	+ 0·54
Juba ... ..	— 0 08	+ 0·17
Nasser ... ..	— 1·20	— 0·77†
Malakal ... ..	— 0·38	— 0·19
Roseires ... ..	— 0·77	— 0·67
Khartoum ... ..	— 0·64	— 0 81
Kajnarti ... ..	— 0·34	— 0·58

\* For July 1st, 1943.

† Nasser Normal is for 1922–35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR JULY 1943

The Weather



The normal settled summer type, but rather warmer than usual.

Northwesterly winds and average conditions prevailed at the beginning of the month, but with falling pressure at the end of the first week, and the formation of a shallow depression west of Cyprus, the weather became warmer, and on the 9th the temperature in Cairo rose to 40° C. (104° F.) compared with a normal value of 36° C. By the 11th, the arrival of cool air from the northwest brought an appreciable fall in temperature, which in Cairo did not rise above 33° C. (91° F.) on that and the following days. The weather remained comparatively cool until the 15th, but for the rest of the month the temperature was maintained with some modifications at two or three degrees Cent. above normal.

For the month as a whole the barometric pressure was everywhere slightly above normal. The day temperature was appreciably above normal in most places, but the nights were relatively cool, and as a consequence the mean temperature was very slightly above normal, except in the Delta where it was below. Mean relative humidity at Alexandria and Cairo (Helwan) was normal, but in the latter half of the month there was considerable low cloud and the mornings were for the most part extremely damp and uncomfortable. In the Sudan, especially in the south, rainfall was considerably below normal.

DEPARTURE FROM NORMAL FOR JULY 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN) 2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1009·4	+0·6	30·7	+0·4	23·0	0·0	26·8	+0·2	0	0
II.—Lower Egypt ...	1009·7	+0·6	34·4	0·0	19·3	—0·4	26·8	—0·2	0	0
III.—Middle Egypt ...	1009·6	+0·6	36·4	+0·7	21·0	—0·2	28·7	+0·2	0	0
IV.—Upper Egypt ...	1008·3	+0·3	39·1	+0·6	22·9	—0·2	31·0	+0·2	0	0
V.—Western Desert	1010·6	+1·1	38·7	—0·3	22·0	—0·2	30·4	—0·2	0	0
VI.—Red Sea (Egypt)...	1006·6	+0·4	33·6	—0·6	24·3	—0·7	29·0	—0·6	0	0
VII.—Red Sea (Sudan)	—	—	—	—	—	—	—	—	—	—
VIII.—North Sudan ...	1008·9	+0·3	39·3	—0·2	25·0	+0·3	32·2	0·0	34	—8
IX.—Central Sudan ...	1011·0	+0·1	34·2	—0·6	22·9	+0·8	28·6	+0·1	103	—20
X.—South Sudan ...	1013·7	+1·3	30·7	—0·7	21·2	+0·6	26·0	0·0	125	—35

(1) Alexandria and Port Said.

RAINFALL DATA FOR JULY 1943 ( IN M/MS )

Station	1943	Diff. From Normal
Juba ... ..	111	— 10
Wau ... ..	186	— 4
Malakal ... ..	78	— 91
El-Obeid ... ..	138	+ 39
El-Fasher ... ..	48	— 56
Khartoum ... ..	95	+ 41
Adis Ababa ... ..	—	—
Roseires ... ..	107	— 78
Wad Medani ... ..	88	— 42
Atbara ... ..	12	— 6
Kassala ... ..	31	— 59
Port Sudan... ..	—	—

L. J. SUTTON,  
*Director, Meteorological Service.*

## State of the River

Lake Albert at Butiaba fell 4 centimetres during the month. Its level on August 1, 1943, was 48 centimetres above the normal but was 50 centimetres below the level of the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated slightly with a downward tendency during the month. The levels were a few centimetres above the normal but much below last year's.

The River Sobat at Nasser continued its rise at about normal rate. The levels were much below both the normal and last year's throughout.

The White Nile at Malakal rose almost normally but below last year. At Gebel Aulia regulation for filling the Reservoir started on the 21st. The D.S. levels were as a whole almost steady from the 24th to the end of the month.

The Blue Nile at Roseires rose at almost normal rate with some sharp fluctuations. The levels were as a whole 20 centimetres below the normal and about 130 centimetres below those of last year. At Khartoum the sharp rise at Roseires was however stunted by filling both Sennar and Gebel Aulia Reservoirs.

On the River Atbara at Khashm el Girba violent fluctuations were recorded, the highest was that on the 19th when the level was 66 centimetres above the normal. The levels were in general below both the normal and last year's.

After the steady levels which prevailed during the last month and were maintained up to the 6th the Main Nile at Kajnarti started its rise thereafter at more than normal rate. The level which was 128 centimetres below the normal on the beginning of the month was only 51 centimetres below it on its end. The levels were much below both the normal and last year's throughout.

The difference of the mean levels in July 1943 from those of July 1942 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	July 1943 minus July 1942	July 1943 minus Normal
	Metre	Metre
Butiaba* ... ..	— 0·50	+ 0·48
Juba ... ..	— 0·26	+ 0·09
Nasser ... ..	— 0·68	— 0·40†
Malakal ... ..	— 0·24	— 0·14
Roseires ... ..	— 1·27	— 0·20
Khartoum ... ..	— 0·55	— 0·55
Khashm el Girba ... ..	— 0·57	— 0·29
Kajnarti ... ..	— 1·57	— 1·49

\* For July 1st, 1943.

† Nasser Normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR AUGUST 1943

### The Weather

Except for the first week, when the temperature was generally normal or slightly below the weather was continuously warmer than usual both by day and night.

At the beginning of the month cool north-westerly winds prevailed. The weather then became steadily warmer, and on the 9th the temperature in Cairo reached 40° C. (104° F.), or 5° C. above the normal for the time of the year. The same figure was reached on the 14th with north-easterly winds. For the rest of the month the temperature was a little above normal on every day.

For the month as a whole the barometric pressure was everywhere below normal. The mean temperature was above normal except in the Central and Southern Sudan.

The mean relative humidity for the month was slightly above normal, but most of the mornings were excessively damp, while the afternoons were frequently drier than usual owing to the higher temperatures. In Cairo district the relative humidity at 8 o'clock was above normal on all but six days, particularly so during the last week. As usual at this time of the year, there was considerable cloud in the mornings, and occasionally early morning mist. The duration of sunshine at Giza averaged 11·3 hours per day, compared with a normal of 11·6 hours.

Throughout the Sudan rainfall was considerably below normal.

### DEPARTURE FROM NORMAL FOR AUGUST 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1008·8	—0·6	31·8	+0·8	24·0	+0·4	27·9	+0·6	0	0
II.—Lower Egypt ...	1009·2	—0·6	34·4	0·0	20·5	+0·4	27·4	+0·2	0	0
III.—Middle Egypt ...	1009·0	—0·5	36·0	+0·8	22·2	+0·7	29·1	+0·8	0	0
IV.—Upper Egypt ...	1007·9	—0·6	38·7	+0·6	23·3	+0·1	31·0	+0·4	0	0
V.—Western Desert(2)	1009·9	0·0	38·8	—0·6	23·2	+0·6	31·0	0·0	0	0
VI.—Red Sea (Egypt)...	1005·8	—0·8	34·6	0·0	25·6	0·0	30·1	0·0	0	0
VII.—Red Sea (Sudan)	—	—	—	—	—	—	—	—	—	—
VIII.—North Sudan ...	1008·2	—0·8	39·4	+0·5	25·5	+1·0	32·4	+0·8	14	—48
IX.—Central Sudan ...	1010·8	—0·3	32·5	—0·7	22·0	+0·6	27·2	0·0	119	—28
X.—South Sudan ...	1013·2	+1·0	30·3	—1·0	21·1	+0·6	25·7	—0·2	118	—55

<sup>(1)</sup> Alexandria and Port Said. <sup>(2)</sup> Kharga and Dakhla.

RAINFALL DATA FOR AUGUST 1943 (IN M/MS)

Station	1943	Diff. From Normal
Juba ... ..	94	— 35
Wau ... ..	106	—102
Malakal ... ..	164	— 18
El-Obeid ... ..	103	— 19
El-Fasher ... ..	56	— 73
Khartoum ... ..	32	— 41
Adis Ababa ... ..	—	—
Roseires ... ..	192	— 25
Wad Medani ... ..	136	— 9
Atbara ... ..	1	— 37
Kassala ... ..	34	— 90
Port Sudan... ..	—	—

L. J. SUTTON,  
*Director, Meteorological Service.*



## State of the River

Lake Albert at Butiaba rose 4 cms. during the month. Its level on September 1, 1943, was 45 cms. above the normal but was 69 cms. below the level of the corresponding day of last year.

At Juba, with the exception of the high peak on the 14th, when the level was about one metre above the normal, the Bahr el Jebel fluctuated normally throughout, and the levels were much below last year's.

The River Sobat at Nasser continued its rise at about normal rate. The levels were below both the normal and last year's throughout.

The White Nile at Malakal rose at about normal rate; the levels were, as whole, little below both the normal and last year's.

The Blue Nile at Roseires fluctuated violently above the normal throughout the month. A prominent peak occurred on the 12th, when the level was 170 cms. above the normal. The levels on the average were about 40 cms. above the normal but a little below last year's. At Khartoum the river rose below both the normal and last year's during the whole month.

On the River Atbara at Khashm el Girba, three violent flushes gradually increasing in height were recorded during the month. The highest was that on the 26th, when the level was 171 cms. above the normal. On the average the levels were well above the normal but below last year's.

The Main Nile at Kajnarti rose rapidly but below the normal until the 20th, the river fluctuated above the normal thereafter to the end of the month. The level which was 72 cms. below the normal on the beginning of the month was 85 cms. above it on its end. The levels were on general about 1·70 metres below those of last year.

The difference of the mean levels in August 1943 from those of August 1942 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	August 1943 minus August 1942	August 1943 minus Normal
	Metre	Metre
Butiaba* ... ..	— 0·69	+ 0·45
Juba ... ..	— 0·68	+ 0·01
Nasser ... ..	— 0·50	— 0·27†
Malakal ( ... ..	— 0·15	— 0·07
Roseires ... ..	— 0·27	+ 0·41
Khartoum ... ..	— 0·59	— 0·35
Khashm el Girba ... ..	— 0·19	+ 0·26
Kajnarti ... ..	— 1·66	— 0·38

\* For September 1st, 1943.

† Nasser normal is for 1922-35 only.

Y. M. SIMAIKA,  
Director, Hydrological Service.

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR SEPTEMBER 1943

4

The Weather

Warmer than usual by day and night almost continuously throughout the month, but with no excessively high temperatures.

On the 4th and 5th the weather was cool but on the 7th a depression appeared south of Crete and temperatures rose, reaching 36° C. (97° F.) in Cairo while during the night the temperature did not fall below 25° C. (77° F.). With the arrival of northwesterly winds following the passage of the depression on the 9th., the weather again became cool ; these conditions lasted for a few days, during which light showers occurred in some localities. From the middle of the month to the end, temperatures were continuously slightly above normal by day, and more so by night. Winds were mainly northeasterly.

During the last week with low pressure over the eastern Mediterranean, the weather was much warmer than usual. The air was rather stagnant and morning mists were frequent. On the 30th., the temperature rose sharply, reaching 37° C. (99° F.), in Cairo and in the evening thunderstorms with light showers occurred in many places.

For the month as a whole the barometric pressure was below normal in Egypt and above in the Sudan, while the mean temperature was above normal in Egypt and slightly below in the Sudan. Rainfall was negligible in Egypt and about normal in the Sudan.

DEPARTURE FROM NORMAL FOR SEPTEMBER.1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1012.1	—0.7	31.4	+1.2	23.6	+1.0	27.5	+1.1	Drops	0
II.—Lower Egypt ...	1012.4	—0.9	32.7	+0.1	19.2	+0.7	26.0	+0.4	0	0
III.—Middle Egypt ...	1012.0	—0.9	33.4	+1.0	20.5	+0.7	27.0	+0.8	Drops	0
IV.—Upper Egypt ...	1010.7	—0.8	36.0	+0.6	21.8	+0.6	28.9	+0.6	0	0
V.—Western Desert...	1012.8	—0.3	35.7	—0.5	19.2	—0.7	27.4	—0.6	0	0
VI.—Red Sea (Egypt)...	1008.7	—0.9	32.4	—0.1	24.0	+0.2	28.2	0.0	0	0
VII.—Red Sea (Sudan)(2)	1006.9	—1.4	36.6	—1.3	25.0	—1.4	30.8	—1.4	—	—
VIII.—North Sudan ...	1009.6	+0.2	38.9	—0.6	24.8	+0.3	31.9	—0.1	16	—2
IX.—Central Sudan ...	1010.8	+0.2	33.9	—1.3	21.7	+0.4	27.8	—0.4	69	—3
X.—South Sudan ...	1012.8	+1.2	31.7	—1.0	21.3	+0.6	26.5	—0.2	137	+ 2

(1) Alexandria and Port Said. (2) P. Sudan only.

RAINFALL DATA FOR SEPTEMBER 1943 ( IN M/MS )

Station	1943	Diff. From Normal
Juba ... ..	91	— 14
Wau ... ..	230	+ 61
Malakal ... ..	90	— 42
El-Obeid ... ..	126	+ 52
El-Fasher ... ..	20	— 11
Khartoum ... ..	23	+ 4
Adis Ababa ... ..	—	—
Roseires ... ..	76	— 72
Wad Medani ... ..	78	+ 22
Atbara ... ..	18	+ 12
Kassala ... ..	16	— 41
Port Sudan... ..	—	—

L. J. SUTTON,  
*Director, Meteorological Service.*

## State of the River

Lake Albert at Butiaba fell 2 centimetres during the month. Its level on October 1st., 1943, was 35 centimetres above the normal and 82 centimetres below the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated almost normally during the whole month ; the levels were on the average 81 centimetres below those of last year.

The River Sobat at Nasser rose gradually at less than normal rate during the whole month ; the levels were below both the normal and those of last year.

The White Nile at Malakal rose at normal rate during the month ; the levels were below both the normal and last year's levels throughout. At Gebel Aulia the second filling of the Reservoir was started on the first of the month and ended on the 21st.

The Blue Nile at Roseires rose sharply to a peak on the 5th when the level was 21.04 metres, i.e. about two metres above the normal. It then fell rapidly until the 18th when the level was about half a metre below the normal. It then fluctuated about the normal till the end of the month. At Khartoum the Blue Nile repeated the same features which were recorded at Roseires.

The River Atbara at Khashm el Girba rose until the 4th when it was 208 centimetres above the normal. It then fell rapidly until the end of the month when the level was almost normal.

The Main Nile at Kajnarti fluctuated during the first 10 days reaching its peak on the 11th when the level was 171 centimetres above the normal. It then fell sharply till the end of the month when its level was 79 centimetres below the normal. The levels on the average were about 80 centimetres above both the normal and those of last year.

The difference of the mean levels in September 1943 from those of September 1942 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	September 1943 minus September 1942	September 1943 minus Normal
	Metre	Metre
Butiaba* ... ..	— 0.82	+ 0.35
Juba ... ..	— 0.81	— 0.04
Nasser ... ..	— 0.55	— 0.30†
Malakal ... ..	— 0.29	— 0.12
Roseires ... ..	+ 0.19	+ 0.39
Khartoum ... ..	+ 0.21	— 0.24
Khashm el Girba ... ..	+ 0.90	+ 0.74
Kajnarti ... ..	+ 0.81	+ 0.80

\* For October 1st, 1943.

† Nasser normal is for 1923-35 only.

Y. M. SIMAIKA,  
Director, Hydrological Service.

**REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR OCTOBER 1943**

**The Weather**

The warmest October in all districts for at least thirty five years. In Cairo, where day and night temperatures were above normal almost continuously throughout the month, it was the warmest October since 1887. The weather was also characterised by light thunderstorms in the first few days, and by severe ones in the fourth week.

At the beginning of the month a shallow trough of low pressure extended from the northern Red Sea to the eastern Mediterranean, with a small depression west of the Delta. Strong easterly winds blew at times, reaching 60 kilometers per hour near Cairo, and the weather became very hot. Light thunderstorms occurred in several places in Lower Egypt for some days, but there was little rain, and the air was for the most part very dry. At Helwan the night of second-third was the hottest on record in any October; the temperature did not fall below 30° C. (86° F.) throughout the night. The heat wave was more intense in Middle Egypt than elsewhere. The peak of the wave was reached on the third, when 39° C. (102° F.) was registered at Alexandria and 44.5° C. (112° F.) in Cairo. This is no less than 14° C. above the normal for the time of year; it was the hottest October day in Cairo at least since observations began at the Khedivial Observatory seventy-five years ago, and easily the hottest day of this year. At many stations in Egypt record high temperatures for October were established on this day. During the heat wave there were frequent changes of wind direction and strength which brought corresponding variations in temperature and humidity. When the heat wave was at its height a gentle wind blowing from the desert in the southwest reduced the relative humidity in Cairo district to as low as ten per cent. so that certain types of vegetation shrivelled up as happens during a severe khamsin in May.

With the passage of the depression on the 4th., and the arrival of winds from the northwest, the weather became cooler, but northeasterly winds succeeded and the temperature remained well above normal.

On the 9th. a depression appeared near Crete and warm southerly winds arose in Egypt, but the depression moving quickly reached Cyprus by the following day, and strong northwesterly winds arrived, bringing heavy rain in many places: at Tanta 18 millimetres were registered. The arrival of a depression over the east — central Mediterranean on the 13th. gave rise to easterly winds and a pronounced heat wave, the temperature in Cairo reaching 39° C. (102° F.) on the 14th. Temperatures then gradually fell until by the 20th. they had reached the normal value. Light showers occurred throughout Lower Egypt on the 16th. or 17th.

On the 20th. the eastern Mediterranean was an area of low pressure and remained so for some days. Cool rainy weather with widespread thunderstorms prevailed for nearly a week. In some places the storms were very severe; 28 millimetres of rain fell at Damietta on the 25th., and 15 millimetres at Alexandria on the following day.

In the last few days of the month, with winds between northeast and southeast, the weather again became warm.

For the month as a whole the barometric pressure was everywhere well below normal, and the mean temperature much above normal. The relative humidity was below normal. In Egypt rainfall was considerably above normal; in the Sudan it was above normal except in the south, where it was appreciably below.

DEPARTURE FROM NORMAL FOR OCTOBER 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (¹)	1014.6	-1.2	30.4	+2.0	22.4	+1.8	26.4	+1.9	17	+ 12
II.—Lower Egypt ...	1014.9	-1.3	31.8	+1.3	18.8	+2.4	25.3	+1.8	11	+ 7
III.—Middle Egypt ...	1014.6	-1.2	33.1	+2.9	20.0	+2.4	26.6	+2.7	4	+ 2
IV.—Upper Egypt ...	1013.6	-0.9	35.0	+2.4	20.5	+1.9	27.8	+2.2	1	0
V.—Western Desert...	1014.9	-0.8	35.0	+1.7	18.7	+2.0	26.8	+1.8	0	0
VI.—Red Sea (Egypt)...	1012.6	-0.8	31.5	+1.3	22.1	+1.7	26.8	+1.5	Drops	0
VII.—Red Sea (Sudan) (²)	1011.4	-0.4	—	—	—	—	—	—	13	0
VIII.—North Sudan ...	1010.0	-0.3	38.9	-0.3	23.7	+0.9	31.3	+0.3	8	+ 4
IX.—Central Sudan ...	1009.6	-0.2	36.3	-1.2	21.5	+0.8	28.9	-0.2	42	+ 25
X.—South Sudan ...	1011.2	+0.4	33.8	-0.3	21.3	+0.6	27.6	+0.2	72	- 22

(¹) Alexandria and Port Said. (²) P. Sudan only.

RAINFALL DATA FOR OCTOBER 1943 (IN M/MS)

Station	1943	Diff. From Normal
Juba ... ..	60	- 29
Wau ... ..	123	+ 1
Malakal ... ..	31	- 39
El-Obeid ... ..	40	+ 24
El-Fasher ... ..	16	+ 10
Khartoum ... ..	22	+ 17
Addis Ababa ... ..	—	—
Roseires ... ..	47	+ 13
Wad Medani ... ..	21	+ 8
Atbara ... ..	Drops	- 2
Kassala ... ..	2	- 6
Port Sudan... ..	13	0

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba fell 8 centimetres, during the month. Its level on November 1st., 1943 was 20 centimetres, above the normal but 92 centimetres below the level of the corresponding day of last year.

The Bahr el Jebel at Juba fell slightly during the month. The levels were below both the normal and last year's throughout.

The River Sobat at Nasser continued its rise at higher than normal rate. The level which was 30 centimetres below the normal at the beginning of the month was only 11 centimetres, below it at its end. The levels were on the average half a metre below last year's.

The White Nile at Malakal rose below both the normal and last year's throughout the whole month.

The Blue Nile at Roseires fell at about normal rate till the 22nd., a slight rise then occurred for a few days after which the river fell above normal to the end of the month. The levels were as a whole almost identical with the normal but a little below last year's. At Khartoum, with the exception of the steady levels which were recorded by the end of the month, the Blue Nile fell continuously throughout.

The River Atbara at Khashm el Girba fell with slight fluctuations during the month. The levels were a few centimeters above the normal and well above those of last year.

At Kajnarti the Main Nile rose a little up to the 4th., then fell rapidly and steadily to the end of the month. The levels throughout were about half a metre below both the normal and those of last year.

The difference of the mean levels in October 1943 from those of October 1942 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	October 1943 minus October 1942	October 1943 minus Normal
	Metre	Metre
Butiaba* ... ..	— 0·92	+ 0·20
Juba ... ..	— 0·51	— 0·21
Nasser ... ..	— 0·49	— 0·28†
Malakal ... ..	— 0·28	— 0·18
Roseires ... ..	— 0·17	+ 0·08
Khartoum ... ..	— 0·34	— 0·67
Khashm el Girba ... ..	+ 0·27	+ 0·12
Kajnarti ... ..	— 0·52	— 0·57

\* For November 1st, 1943.

† Nasser normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR NOVEMBER 1943

### The Weather

Much warmer than usual continuously throughout the month; on the average, the mildest November for the last ten years.

At the beginning of the month the weather was unsettled owing to the presence of a depression over the eastern Mediterranean. Heavy showers occurred near the coast and in the northern Delta, particularly on the 3rd and 4th, and light showers further inland. Rainy weather ceased on the 6th when a deep depression approaching from the central Mediterranean gave rise to easterly and southerly winds in Egypt, and the weather rapidly became warmer until the passage of the depression on the 9th. The temperature in Cairo rose to 35° C. (95° F.), and the same temperature was reached at Suez and Tor, being a record for November at these two Stations. After a short spell of northerly winds and cooler weather Egypt again came under the influence of a Mediterranean depression, and southerly winds prevailing the weather again became very warm; the temperature in Cairo rose to 35° C. (9° C. above normal) on the 13th. By the following day the depression had passed to Syria and the north-westerly winds in its rear brought a sharp fall of temperature in Egypt, with very light showers on the coast. High pressure then formed over Egypt and the eastern Mediterranean, resulting in moderate north to north-east winds and mild settled weather, with widespread morning mists. A minor heat wave occurred on 23rd-25th during the passage of a shallow depression. Subsequently the weather was settled, with fresh north-easterly winds.

For the month as a whole the barometric pressure was above normal, except in Upper Egypt, but not by large amounts. Temperature was everywhere much above normal; average daily maximum temperatures were the highest for November since 1933, while along the Mediterranean coast and in Cairo district, though not in the middle of the Delta it was the warmest November by night on record. Duration of sunshine at Helwan, (8.6 hours per day) and Giza (8.3) was very slightly below normal. Relative humidity at Alexandria and Cairo was about average. Rainfall was below normal in all districts.

### DEPARTURE FROM NORMAL FOR NOVEMBER 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1018.3	+1.1	27.4	+2.4	19.8	+2.6	23.6	+2.5	4	— 13
II.—Lower Egypt ...	1018.5	+0.8	27.4	+1.2	15.4	+2.0	21.4	+1.6	Drops	— 6
III.—Middle Egypt ...	1018.2	+0.7	28.6	+2.8	16.1	+2.0	22.4	+2.4	0	— 3
IV.—Upper Egypt ...	1016.8	—0.1	31.3	+3.3	15.8	+2.0	23.6	+2.6	0	0
V.—Western Desert...	1017.7	—0.1	30.6	+2.6	14.1	+2.4	22.4	+2.5	0	0
VI.—Red Sea (Egypt)...	1016.0	+0.4	28.7	+1.6	18.3	+1.6	23.5	+1.6	0	— 3
VII.—Red Sea (Sudan) <sup>(2)</sup>	1011.0	—2.5	—	—	—	—	—	—	2	— 40
VIII.—North Sudan ...	1011.2	—1.3	36.4	+1.3	20.9	+2.2	28.6	+1.8	0	0
IX.—Central Sudan ...	1009.4	—1.4	37.0	+0.9	19.4	+2.4	28.2	+1.6	1	0
X.—South Sudan ...	1009.7	—0.8	36.4	+0.7	20.9	+1.3	28.6	+1.0	8	— 12

<sup>(1)</sup> Alexandria and Port Said. <sup>(2)</sup> P. Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.



## State of the River

Lake Albert at Butiaba fell 14 cms. during the month. Its level on December 1st, 1943, was almost normal but was about one metre below the level of the corresponding day of last year.

The Bahr el Jebel at Juba was nearly steady during the whole month. The levels were below both the normal and last year's throughout.

The River Sobat at Nasser reached its maximum during the first decade of the month and started its annual fall at faster than normal rate. The levels were throughout below both the normal and last year's.

The White Nile at Malakal was almost steady during the whole month. The levels were below both the normal and last year's throughout.

The Blue Nile at Roseires started the month with a slight rise, followed by a steady fall which continued till the end of the month. The levels were a little higher than the normal and last year's. At Khartoum the river fell however more rapidly owing to the completion of the filling of Sennar Reservoir. The levels were in general half a metre below the normal but a little above those of last year.

The River Atbara at Khashm el Girba fell almost identically with the normal. The levels were above those of last year.

The Main Nile at Kajnarti fell below the normal throughout the month but the levels were almost identical with those of last year until the 5th, and above them thereafter.

The difference of the mean levels in November 1943 from those of November 1942 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	November 1943 minus November 1942	November 1943 minus Normal
	Metre	Metre
Butiaba* ... ..	— 0·97	+ 0·01
Juba ... ..	— 0·50	— 0·29
Nasser ... ..	— 0·27	— 0·10 †
Malakal ... ..	— 0·18	— 0·15
Roseires ... ..	+ 0·19	+ 0·23
Khartoum ... ..	+ 0·11	— 0·50
Khashm el Girba ... ..	+ 0·28	+ 0·01
Kajnarti ... ..	+ 0·37	— 0·61

\* For December 1st, 1943.

† Nasser normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

21 1944 ★

**Ministry of Public Works, Egypt.—Physical Department**

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**REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR DECEMBER 1943**

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**The Weather**

On the Mediterranean coast, the mildest December for twenty-seven years; in Cairo district, the mildest December since 1930. Heavy and widespread rain about the middle of the month.

At the beginning of the month, warm easterly winds prevailed, but the weather gradually became cooler towards the end of the first week.

On the 11th Egypt came under the influence of a depression over the Central Mediterranean: winds veered to the south-east and the weather became steadily warmer until the 13th, when the temperature in Cairo reached  $29^{\circ}\text{C}$ . ( $84^{\circ}\text{F}$ .) or  $8^{\circ}\text{C}$ . above the normal for the time of the year. By the following day the depression had reached Palestine, and the arrival of northerly winds in Egypt brought a sharp fall in temperature. Thick fog was widespread, particularly in the morning of the 15th. Conditions remained disturbed over the Eastern Mediterranean for a few days, during which period frequent heavy showers occurred throughout Lower Egypt. From the 16th to the 23rd the weather was cooler than usual by day, but the nights remained mild.

On the 21st low pressure forming over Sinai Peninsula caused fresh north-easterly winds, which reached the force of a gale at Helwan during the night. Abnormally unsettled weather followed, and very severe rainstorms occurred throughout Egypt, even as far south as Qena and in the oasis of Kharga. The rainfall was particularly heavy near the Mediterranean Coast: at Borollos 58 mms. fell in two days, of which 47 mms. fell on the 22nd, on which day 26 mms. fell at Damietta and at Damanhour, 20 at Mansura and 17 at Alexandria. There was rain in Cairo area for three days, but the amount reached only about five millimetres. Six millimetres were recorded at Asyût, and 8 at Kharga Oasis. It is interesting to note that shortly before noon on the 23rd, the barometric pressure in Cairo fell by six millibars within an hour, a remarkably rapid fall for this region, but it did not give rise to any large disturbance of wind or weather.

Mild settled weather with north-easterly winds followed, continuing until the 28th when a shallow depression arriving over the Eastern Mediterranean caused overcast skies and light scattered showers throughout Lower Egypt.

For the month as a whole both barometric pressure and temperature were above normal throughout Egypt. It may be mentioned that each of the first six months of the year was cooler than usual, while since July the weather has been almost continuously warmer than average. In Cairo the night temperature has not fallen below the normal on any occasion for the last five months. Rainfall in December was slightly below normal on the coast, but much above normal elsewhere. Duration of sunshine was 6.9 hours per day at Helwan and 6.2 hours per day at Giza, these being respectively 0.7 and 1.1 hours per day below the normal.

DEPARTURE FROM NORMAL FOR DECEMBER 1943

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX + MIN)/2			
	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal	1943	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1020.2	+2.2	22.4	+1.8	15.7	+3.2	19.0	+2.5	22	— 4
II.—Lower Egypt ...	1020.2	+1.5	22.4	+0.9	11.6	+2.8	17.0	+1.8	24	+ 15
III.—Middle Egypt ...	1020.3	+1.3	22.6	+1.6	11.8	+2.3	17.2	+2.0	6	+ 3
IV.—Upper Egypt ...	1019.2	+0.1	24.7	+1.8	11.7	+2.7	18.2	+2.2	1	0
V.—Western Desert...	1020.4	+0.6	24.0	+1.1	9.4	+2.8	16.7	+2.0	4	+ 4
VI.—Red Sea (Egypt)...	1017.4	0.0	24.6	+1.1	15.2	+2.0	19.9	+1.6	Drops	— 2
VII.—Red Sea (Sudan) <sup>(2)</sup>	1011.7	+3.4	—	—	—	—	—	—	32	+ 6
VIII.—North Sudan ...	1013.7	+1.1	32.7	+1.5	16.9	+2.4	24.8	+2.0	0	0
IX.—Central Sudan ...	1011.8	+1.0	35.0	+1.4	16.0	+2.0	25.6	+1.8	Drops	0
X.—South Sudan ...	1011.0	+0.1	36.5	+0.6	20.1	+1.6	28.3	+1.1	1	— 5

(<sup>1</sup>) Alexandria and Port Said. (<sup>2</sup>) P. Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba fell 12 cms. during the month. Its level on January 1, 1944, was 8 cms. below the normal and 96 cms. below the level of the corresponding day of last year.

The Bahr el Jebel at Juba was almost steady during the month. The levels were below both the normal and last year's throughout.

The River Sobat at Nasser continued its fall at much faster than normal rate. The levels were on the average more than one metre below the normal and with the exception of a few days at the end of the month, were also below last year's throughout.

The White Nile at Malakal started its fall by the beginning of the month at faster than normal rate. The level which was 10 cms. below the normal at the beginning of the month was 61 cms. below it at its end. The levels were in general 25 cms. below those of last year.

The Blue Nile at Roseires fell almost steadily during the whole month. The levels were above the normal and almost identical with those of last year. With the exception of a slight rise during the first decade of the month due to the cessation of the filling of Semar Reservoir, the River at Khartoum fell steadily during the whole month below both the normal and last year.

On the Main Nile at Kajarti, the River fell steadily until the 18th, then rose slightly until the 22nd and fell again thereafter. The levels were in general about 80 cms. below the normal and about 10 cms. below last year's.

The difference of the mean levels in December 1943 from those of December 1942 and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	December 1943 minus December 1942	December 1943 minus Normal
	Metre	Metre
Butiaba * ... ..	— 0·96	— 0·08
Juba ... ..	— 0·45	— 0·21
Nasser † ... ..	— 0·58	— 1·05
Malakal ... ..	— 0·25	— 0·24
Roseires ... ..	+ 0·27	+ 0·27
Khartoum ... ..	— 0·15	— 0·55
Kajarti ... ..	— 0·12	— 0·82

\* For January 1st, 1944.

† Nasser normal is for 1922-35 only.

### The following is review of the state of the river during the past year :—

River conditions in the spring and early summer were about normal and the emptying of both the Gebel Aulia and Aswan Reservoirs followed a normal course. Until about May 20th conditions on the Blue Nile were promising but from that date onward it was evident that the early rains had failed and the main rise of the river was delayed for about one month. Conditions at Khartoum during June were the lowest for 40 years with the single exception of the year 1913.

The flood of 1943 was one of the most remarkable on record. It was very late in rising actually about one month late and this caused a serious water shortage in Egypt during July when every drop of water was required from the Reservoir at Aswân and the Reservoir level fell to 90·90 metres. This was the lowest ever recorded since the construction of the dam with the exception of the year 1910.

From the rise of the flood until August 24 when the Blue Nile should normally be at its peak, all indications were of a rather poor or at best an average flood. Yet in the course of a few days high flood conditions were established due to a late peak on the Blue Nile and to a very late and very high peak on the Atbara. Such a transformation at short notice has not occurred since modern records of the river began.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*